

Applicants : Hiroko Ueda et al.  
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Attorney Docket No.: 60004-111US1  
Client Ref. No.: F04-037-PCT/US/MH

### REMARKS

Applicants have amended claims 1, 8, and 10 to each include a limitation recited in both claims 27 and 28. As this limitation has been examined before, it raises no new issues that will require further consideration or search and also does not touch the merits of the application within the meaning of 37 C.F.R. § 1.116(b). Thus, the amendments should be entered. Further, since amended claims 1 and 10 are identical in scope to claims 27 and 28, respectively, the amendments to these two claims should be entered *a fortiori*.

To eliminate redundancy, Applicants have cancelled claims 27 and 28.

Claims 1-26 are pending. Applicants respectfully request that the Examiner reconsider this application, as amended, in view of the following remarks.

#### Rejection under 35 U.S.C. § 112, first paragraph

The Examiner rejects claims 27 and 28 for lack of written description on the ground that the Zn:Si/Al ratio range “82/18-99/1” recited therein has no support in the specification. See the final Office Action, page 4, lines 3-7. Of note, claims 27 and 28 have been cancelled and the limitation recited therein has been incorporated into claims 1 and 10. Applicants will discuss claims 1 and 10 instead.

Claim 1 covers a composition containing a Zn-Si/Al oxide complex, in which the Zn:Si/Al ratio ranges from 82/18 to 99/1. Claim 10, on the other hand, is drawn to a process including adding a Zn and Si/Al complex, in which the Zn:Si/Al ratio ranges from 82/18 to 99/1.

In the response to the previous office action, Applicants pointed out that (1) the specification describes a Zn:Si/Al ratio range of 50/50-99/1 and provides examples in which the ratio was 82/18 and (2) one skilled in the art, in view of the specification, would recognize that Applicants had possessed the claimed invention, in which the Zn:Si/Al ratio ranges from 82/18 to 99/1. See footnote 1.

In the final Office Action, the Examiner asserts that the specification only provides examples in each of which the Zn-Si/Al oxide complex constituted 0.1 or 0.5 by weight of a claimed composition and had a diameter of 0.36 µm. She proceeds to

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contend that the claims, not particularly limited to the weight and diameter of the Zn-Si/Al oxide complex, are not consistent in scope with the examples.

Applicants disagree and would like to bring the Examiner's attention again to *In re Wertheim* 541 F.2d 257, 191 USPQ (CCPA 1976), a copy of which is attached as "Exhibit A." In that case, the claim at issue cover a process including, among others, concentrating a coffee extract to a solid level "between 35% and 60%," foaming the concentrated extract, and freeze-drying the foam. The original specification describes a range of "25%-60%," not "35%-60%." It also includes a specific example of "36%." Despite the fact that the specific example only embodied one instance for each of the parameters related to the claimed process (e.g., the foam density recited in claim 37 and freeze-dry temperature and pressure recited in claims 24 and 38), the court ruled that the new claim limitation to "between 35% and 60%," not even "between 36% and 60%," did meet the description requirement. The court found that "as a factual matter, persons skilled in the art would consider processes employing a 35-60% solids content range to be part of appellants' invention."

Like the specification in Wertheim, the instant specification describes a broad range of "50/50-99/1," which embraces the narrower range "82/18-99/1" recited in claims 1 and 10, and includes specific examples of "82/19," which is equal to the lower limit of the narrower range. Also like the specification in Wertheim, examples provided in the instant specification embody one or more instances for each of the parameters related to the claimed invention, such as the weight and diameter of the Zn-Si/Al oxide complex. In view of on these facts, "persons skilled in the art would consider processes [or compositions] employing [a 82/18-99/1 Zn/Si ratio] to be part of [Applicants'] invention." Thus, pursuant to the Wertheim decision, the instant specification provides sufficient written description for the 82/18-99/1 recited in claims 1 and 10. Applicants respectfully request withdrawal of this rejection.

Rejection under 35 U.S.C. § 103 (a)

The Examiner rejects claims 1-28 for obviousness over Takai, US Patent 6,284,362 (Takai) in view of Yamada et al., European Patent 0,282,287 (Yamada) or Tai et al. US Patent Application Publication 2003/0018114 (Tai). See the final Office Action, page 5, lines 8-13. Claims 27 and 28 have been cancelled. Applicants will discuss patentability of claims 1-26 below.

Independent claim 1 will be addressed first. This claim covers a water-absorbent resin composition. This composition contains, in addition to a resin, a Zn-Si/Al oxide complex. The mass ratio of the Zn content to the Si/Al content ranges from 82/18 to 99/1.

Takai discloses a water-absorbent composition containing a hydrogel resin and an inorganic metal oxide microfiller. The microfiller can be an oxide of silicon, aluminum, iron, titanium, magnesium, or zirconium. This reference does not teach or suggest using a Zn-Si/Al oxide complex, let alone their unique ratio required by claim 1.

Yamada discloses a resin composition having “5-60 mole%, preferably 15-55 mole% of ZnO, 5 to 80 mole%, preferably 25-75 mole% of SiO<sub>2</sub>, and 0-60 mole%, preferably 0 to 45 mole% of Al<sub>2</sub>O<sub>3</sub>.” See page 4, lines 11-13. According to the Examiner’s calculation, this composition contains less than 67 mass% ZnO. See the office action dated December 31, 2008, page 12, lines 13-14. To the extent that Yamada prefers less than 67 mass% ZnO in its composition, this reference **teaches away** from a mass ratio of 82/18 to 99/1 (corresponding to 82 mass% ZnO or higher) required by 1.

Tai discloses a deodorizer that can be used in a resin composition. The deodorizer contains a Zn compound and a Si/Al compound. Referring to paragraph 0182, the Examiner asserts that Tai teaches the weight ratio of the Zn compound to the Si compound ranges from 1:5 to 5:1, overlapping the 82/18-99/1 range recited in claim 1. She proceeds to contend that “case law holds that a *prima facie* case of obviousness exists where the claimed ranges and prior art ranges [] are close enough that one skilled in the art would have expected them to have the same properties.” See the final Office Action, page 6, lines 15-18.

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Applicants would like to bring to the Examiner's attention that

"Applicant can rebut a presumption of obviousness based on a claimed invention that falls within a prior art range by showing '(1) [t]hat the prior art taught away from the claimed invention...or (2) that there are new and unexpected results relative to the prior art.' *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 1322, 73 USPQ2d 1225, 1228 (Fed. Cir. 2004)." MPEP 2144.05.III; emphasis added.

First, Applicants point out that Tai indeed teaches away from the range of 82/18-99/1 recited in claim 1. Paragraph 182 of Tai relied on by the Examiner discloses a broad range, i.e., 1:5 to 5:1, which slightly overlaps with the 82/18-99/1 (i.e., 4.55:1-99:1) range recited in claim 1. Yet, this paragraph further states that "[t]he ratio of the zinc oxide and the silicon dioxide is preferably 1:4 to 4:1, and more preferably 1:3 to 3:1." To this extent, Tai **teaches away** from the range of 82/18-99/1 recited in claim 1. Pursuant to the above-quoted MPEP guidance, the *prima facie* case of obviousness asserted by the Examiner has been successfully rebutted.

Second, Applicants point out that the claimed invention has an unexpected advantage over the prior art.

The specification describes 11 compositions denoted as Examples 1-11. See pages 66-69. All of these compositions contained Zn oxide and Si/Al oxide at the ratio of 82/18 or 91/10. In other words, they are all covered by claim 1. As shown in Table 2 on pages 76-77, all of these compositions had excellent deodorizing effect, i.e., after 30 minutes of absorption, 6 ppm or much lower level of hydrogen sulfide remained in the residue. By contrast, the compositions denoted as Comparative Examples 5 and 6 contained Zn oxide and Si oxide at the ratio of 40/60. See pages 70-71. These two compositions are not covered by claim 1, but correspond to the Tai compositions, which may contain Zn oxide and Si/Al oxide at the ratio ranging from 1:5 to 5:1. They exhibited significantly lower deodorizing effect. Also see Table 2. More specifically, 10.5 ppm and 8 ppm of hydrogen sulfide remained in the residue after absorption with these compositions for 30 minutes.

In short, the compositions covered by claim 1 more effectively absorb hydrogen sulfide than those disclosed Tai, in which the ratio of Zn: Si/Al ranges from 1:5 to 5:1. Referring again to MPEP 2144.05.III, under this guidance, the *prima facie* case of obviousness asserted by the Examiner has been successfully rebutted by Applicants' showing of the above-discussed unexpected advantage.

In sum, contrary to the Examiner's belief, Tai does not teach or suggest the unique Zn:Si/Al ratio range required by claim 1.

Since none of Takai, Yamada, and Tai teaches or suggests the Zn:Si/Al ratio range of 82/18-99/1 as required by claim 1, any combination of these three references does not render claim 1 obvious.

Applicants now turn to claims 8 and 10, the other independent claims rejected by the Examiner.

Claim 8 covers an absorbent material containing, among others, a Zn-Si/Al oxide complex. Claim 10 covers a method for producing water-absorbent resin composition containing a Zn-Si/Al oxide complex. Like claim 1, both claims 1 and 8 require that the mass ratio of the Zn content to the Si/Al content be 82/18-99/1.

As discussed above, none of Takai, Yamada, and Tai teaches or suggests a Zn:Si/Al ratio range of 82/18-99/1. Thus, these references, either taken alone or in any combination, do not render obvious claims 8 and 10, which require the above-mentioned unique feature.

For the same reasons set forth above, claims 2-7, 9, and 11-24, all dependent from claim 1, and claims 25 and 26, both dependent from claim 10, are also not rendered obvious by Takai, Yamada, and Tai, taken alone or in any combination.

#### Double-Patenting rejection

The Examiner rejects claims 1, 4, 6-10, and 22-26 for obviousness-type rejection, relying on (1) claims 1-4, 6, 21-22, 24, 26, and 27-29 of copending Application No. 10/555,707, (2) claims 1-6, 10, 12, 14, and 18-25 of copending Application No. 10/570,965, (3) claims 1-5, 9, and 10 of copending Application No. 11/662,590, and (4)

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claims 1, 6, and 11-15 of US Patent No. 7,473,470. See the final Office Action, page 2, line 12 through page 3, line 17.

Applicants would like to address this double-patenting issue after the Examiner has removed the obviousness rejection discussed above.

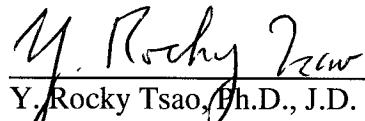
### CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

The Petition for Extension of Time fee in the amount of \$1,110.00 is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to Deposit Account No. 50-4189, referencing Attorney Docket No. 60004-111US1.

Respectfully submitted,

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